

DOCUMENT RESUME

ED 199 591

CG 015 012

AUTHOR Rothblum, Esther D.; Green, Leon
TITLE The Reformulated Model of Learned Helplessness: An Empirical Test.
RHB DATE Mar 80
NOTE 25p.; Paper presented at the Annual Meeting of the Southeastern Psychological Association (26th, Washington, DC, March 26-29, 1980).
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Anxiety; *Attribution Theory; Depression (Psychology); Expectation; *Failure; Hostility; *Individual Power; *Locus of Control; *Performance Factors; Psychological Patterns; Self Esteem; *Success
IDENTIFIERS *Helplessness

ABSTRACT

Abramson, Seligman and Teasdale's reformulated model of learned helplessness hypothesized that an attribution of causality intervenes between the perception of noncontingency and the future expectation of future noncontingency. To test this model, relationships between attribution and performance under failure, success, and control conditions were examined. After completing an attribution scale, 164 subjects were randomly assigned to failure, success, or control conditions. Subjects' attributions were assessed before and after taking a performance test containing mathematical problems. Subjects then completed a second performance test containing mathematical and verbal problems. Following the second performance test, subjects completed measures of attribution, depression, anxiety, and self-esteem. Results demonstrated that uncontrollable failure produces depression, anxiety, and hostility. Performance deficits depended upon attributions made on the internality and stability dimension. The internality dimension did not have a main effect on self-esteem, and the globality dimension did not affect generalization of helplessness. Some support, some refinements, and some contradictions to the reformulated learned helplessness model were found. (Author/NRB)

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ED199591

The Reformulated Model of Learned
Helplessness: An Empirical Test

Esther D. Rothblum and Leon Green
Rutgers University

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Running Head: Reformulated Helplessness

The Reformulated Model of Learned
Helplessness: An Empirical Test

Recently Abramson, Seligman, and Teasdale (1978) proposed a reformulated model of learned helplessness to integrate evidence that supported an attributional analysis of the helplessness effects. The original model (Seligman, 1975) hypothesized that exposure to uncontrollable events or noncontingency produced an expectation that future events would also be uncontrollable. Expectation of future noncontingency produced motivational, cognitive and emotional deficits. Disenchantment with the original model of learned helplessness was based primarily upon its inability to distinguish between several types of helplessness (Abramson et al., 1978) and its failure to predict which helplessness situations would produce a facilitation rather than a reduction in performance. The original model fails to distinguish outcomes that were uncontrollable for everyone from outcomes that were uncontrollable only for the individual (Douglas & Anisman, 1975; Klein, Fencil-Morse, & Seligman, 1976; Wortman, Paciera, Shusterman, & Hibisher, 1976). No distinction was made between global and specific helplessness (Douglas & Anisman, 1975; Hanusa & Schulz, 1977). No discrimination was made between conditions responsible for chronic helplessness and those responsible for short lived or non-recurrent helplessness (Douglas & Anisman, 1975).

Abramson, et al. (1978) proposed a three-dimensional attribution

model of learned helplessness to account for the inadequacies in learned helplessness theory. The reformulated model hypothesized that an attribution of causality intervenes between the perception of non-contingency and the future expectation of future noncontingency (Abramson, et al., 1978; Miller & Seligman, in press).

In uncontrollable situations, attributions to stable, global, and internal factors respectively produce chronic, general, and self-esteem deficits, whereas attributions to unstable, specific, and external factors respectively produce transient, specific, and no self-esteem deficits. In controllable situations, attributions to unstable, specific, and external factors create chronic, global, and self-esteem deficits (Miller & Seligman, in press).

Seligman, Abramson, Semmel, and von Baeyer (1979) provided supportive evidence for the reformulated model of helplessness. Their results showed that subjects who received higher ratings of depression, also attributed negative outcomes to more internal, stable, and global factors. Wortman and Dintzer (1978) critiqued the reformulated model of learned helplessness and raised serious questions about the viability of the attributional analysis. They questioned the significance of the dimensions, the importance of attributions in predicting reactions to uncontrollable outcomes, the relationship between various deficits, and the lack of prediction of facilitated performance. Covington and Omelich (1979) raised more serious questions about the causal role of attributions.

The purpose of the present study was to provide an empirical test of the reformulated learned helplessness model by determining whether

individuals' performance and affect after exposure to uncontrollable failure or controllable success can be predicted from their prior attributions about failure and success. Abramson et al. (1978) presented their reformulated model in the context of uncontrollable failure on a Graduate Record Examination (GRE) (Table 2, p. 57). They defined failure as not obtaining desired outcomes (poor performance) and success as its converse. According to Abramson et al. (1978), their reformulated model can be tested "either by measuring the attributions and correlating them with the deficits that occur or by inducing the attributions and predicting deficits". The present study's design used a combination of these strategies in the context of Abramson et al.'s (1978) GRE example. In addition, Seligman (Note 1) reviewed the design and stated that it was adequate to provide a test of the reformulated learned helplessness model.

The present study tested four hypotheses. Hypothesis 1 stated that learned helplessness effects on affect and performance would occur if subjects were exposed to uncontrollable failure. These effects should be represented by lower performance and an increase in depression and anxiety. Hypothesis 2 proposed that if subjects attribute failure to internal factors, their self-esteem would be lower and their anxiety and depression would be higher than subjects who attribute failure to external factors. Conversely, subjects who attribute success to internal factors would show the reverse relationship to self-esteem, anxiety and depression. Hypothesis 3 stated that if subjects attribute failure or success on a task to specific factors, they would fail or succeed respectively on

subsequent similar and dissimilar tasks. Hypothesis 4 proposed that if subjects attributed failure on a task to stable factors, they would show lower self-esteem on a subsequent similar task than subjects who attributed failure to unstable factors.

Method

Subjects

Subjects were recruited from undergraduate students in introductory psychology courses at two Rutgers University colleges. A total of 164 subjects, 73 males and 91 females, attended the testing session and completed the procedures and an informal consent statement.

Experimenters

One experimenter, the first author, gave the subjects their manipulation instructions and provided subjects with false feedback materials. The second experimenter conducted all other procedures and was unaware of the purpose of the experiment or subjects' condition.

Materials

Attribution measures. Semmel, Abramson, Seligman, von Baeyer (Note 2) constructed the Adult Attribution Style Scale (AASS) which consisted of six achievement oriented statements and six affiliation oriented statements, each divided equally between bad and good outcomes. Subjects are required to identify a major cause of each outcome and rate each cause on 7-point scales for degree of internality, globality, stability, and importance. Subjects must rate themselves in each situation prior to identifying a cause and making ratings. See Seligman, et al. (1979) for a fuller discussion on the AASS's construction, content, standard

instructions and psychometric properties.

The authors designed the Self-Rating Form to assess subjects' attributions about their specific performance on the performance measures. The Self-Rating Form was identical to the AASS with the exception of focus on specific attributions to the performance measures, a 7-point scale assessing expectation of performance, and one assessing disparity between current and past performance.

Affect measures. The Multiple Affect Adjective Check List (MAACL) assessed depression and anxiety. The MAACL instructed subjects to check off adjectives that describe their current mood (Zuckerman & Lubin, 1965). See Zuckerman and Lubin (1965) for reliability and validity information on this measure.

Beck Depression Inventory (BDI) provided a quick self-rating measure which assessed levels of depression across 21 situations pertaining to affect. Subjects were instructed to read each group of statements and then circle the number beside the statement that best describes the subject's feeling in the past week. The BDI has significant reliability (Beck, 1967) and validity (Bumberry, Oliver, & McClure, 1978).

The Self-Description Inventory assessed ability and competence across 13 performance areas. Instruction required subjects to rate their level of competence or ability in each area on a scale from 0-100. See Schraner and Rosenberg (1970) for more complete information on the format, items, construction, and validity of this measure. The Self-Esteem measure (Rosenberg, 1965) provided a measure of self-esteem by instructing subjects to check appropriate self-referent statements.

Performance measures. The Transfer Student Aptitude Test (TSAT) consisted of items selected from actual Standard Achievement Test (SAT) items provided by The Educational Testing Service. Three versions of the TSAT were constructed; a different one for each condition. All 20 items selected for the Success Condition (S) had been answered by over 50 percent of the 450 students in ETS norming sample. For the Failure Condition (F), only the first three items had been answered by over 50 percent of the ETS sample; the other 17 had been answered by only 30 percent. For the Control Condition (C), ten solvable items were selected from the S Condition's TSAT and ten unsolvable items were selected from the F Condition's TSAT. The S Condition's scoring key provided subjects with correct answers to all items; the F Condition's key provided seven correct and 13 incorrect answers. Bogus conversion tables and performance graphs were used to convert subjects raw scores into scale scores ranging from 200-800 points.

The second performance measure, the Mathematic-Verbal Test (MVT), was used to assess helplessness effects due to the manipulation of performance on the first performance measure. The MVT consisted of five subtests. Subtest A contained ten items from an actual mathematics subtest of the SAT. Subtest B had ten mathematics problems that required subjects to generate correct equations from a combination of numbers and signs. Subtest C consisted of ten number series to which subjects had to write the next two numbers in the series. Subtest D consisted of ten verbal anagrams and subtest E had 20 items from an actual verbal subtest of the SAT.

Other measures. A blank sheet of paper was used by subjects to record past SAT scores. Another sheet of paper was used by subjects to write their perceptions of the experiment's purpose.

Procedure

Premaniipulation. Subjects were randomly assigned to the three conditions. Fifty-five subjects were assigned to the S condition, 56 to the F condition, and 53 to the C condition. All subjects were told that the study examined personality and performance. Subjects were given standard instructions to complete the AASS (Seligman et al., 1979), and the MAACL Today Form (Zuckerman & Lubin, 1965). On the Self-Rating Form, subjects received the same standard instructions given on the AASS but specific to their performance on the TSAT.

The experimenter informed subjects that the TSAT was intended originally for transfer students, and therefore was more difficult than the SAT, less difficult than the Graduate Record Examination, but approximately at their level of ability. Before taking TSAT, subjects listed all previous Educational Testing Service's tests they had taken and corresponding scores. In addition to the standard instruction provided by Educational Testing Service, subjects in all conditions were told that they would be given 20 minutes to complete the TSAT.

S condition. Experimenters told subjects that it was important for them to do well on the TSAT, since they must compare their scores with other students. Subjects then took the S version of the TSAT. After completing the test, subjects completed a second Self-Rating Form, scored their answer sheets, converted their raw scores to bogus scale scores and compared their scale scores on a bogus graph to other students within

their college and to students nationally. Both the bogus scale scores and the graph were constructed to provide high scores relative to other students at the same level in college. Last, subjects were told to complete a third Self-Rating Form after converting raw scores to scale scores.

F condition. Experimenters gave these subjects the same instructions, materials, and procedures given to those in the S condition with the following exceptions. Subjects took the F version of the TSAT. In this condition, the bogus scale scores and graphs were constructed to provide low scores relative to other students at the same college level.

C condition. Subjects received the C version of TSAT and were told that it had not been standardized. Experimenters instructed them to rate each item according to its appropriateness as an item for the TSAT. These subjects did not receive evaluative feedback on their performance.

Postmanipulation. All subjects followed standard instructions for completing the MAACL, a measure of self-esteem (Rosenberg, 1965), a self-description inventory (Schrauger & Rosenberg, 1970) and the Beck Depression Inventory (Beck & Beamesdorfer, 1974). Subjects completed a fourth Self-Rating Form and took the second performance test, the Mathematics-Verbal Test. Then subjects completed a fifth Self-Rating Form and wrote their perception about the purpose of the study. Finally, all subjects were debriefed about the deception and were informed about the true purpose of the study.

Results

Data Analyses

All analyses are based upon analysis of variance. All comparisons

are based upon Duncan Multiple Range Test or analysis of covariance. Although several measures were given several times, repeated measures analysis of variance are not performed because the within subject error term crossed with trials, the large number of subjects, and the large number of measures exceed the computational capacity of the computer. Since the results from the Self-Rating Forms show similar findings as those from the AASS, these results are not reported.¹ All analyses of attributional dimensions are based upon data from the AASS. On the AASS, a median-split was conducted on the total score for each dimension to form two categories.

Premanipulation

Analysis of variance was performed on the result of the AASS to investigate initial differences in attributions among conditions. There are no initial differences on the AASS among the three conditions.

Postmanipulation

An analysis of variance was performed on subjects TSAT scores. The manipulations were effective. Subjects in the F condition perform significantly worse than subjects in the S condition, $F(1,106) = 128.27$, $p < .0001$.

Hypothesis 1--Learned helplessness effects. Hypothesis 1 receives support. On the MAACL, subjects in the F condition are significantly higher on anxiety, $F(2,156) = 5.61$, $p < .005$; depression, $F(2,156) = 5.47$, $p < .005$; and hostility, $F(2,156) = 6.26$, $p < .005$ than subjects in the S and C conditions. There are no significant differences among conditions on the BDI, Self-Description Inventory, and Self-Esteem measure. There is no significant main effect for performance on the MVT or its

subtests.

Hypothesis 2: Internality an affect. Hypothesis 2 does not receive support. There are no significant interactions between the internality dimension and the S and F conditions on any affect measure.

Hypothesis 3: Globality and performance. The interaction of the globality dimension and conditions on the MVT is not significant.

Hypothesis 4: Stability and prior helplessness. Low scores on previous SAT Mathematics subtests are used as an index of prior helplessness in mathematics. With previous SAT Mathematics scores as a covariate, the stability dimension interacts significantly with conditions on the Self Esteem measure, $F(2, 145) = 4.14, p < .04$. Comparisons indicate that subjects in the S condition who make attributions to stable factors and those in the C condition who make attributions to unstable factors have significantly higher self-esteem ratings than those in the F and C conditions who make attributions to stable factors. Figure 1 shows mean Self-Esteem ratings for conditions. In the S conditions,

Place Figure 1 about here

subjects who make attributions to stable factors have higher Self-Esteem ratings than those who make attributions to unstable factors. Subjects in the F condition show the reverse relationship for stability.

Other Effects

Performance measures. The stability dimension interacts significantly with conditions on the performance measures. There is a significant interaction between the stability dimension and conditions on the

performance measures. There is a significant interaction between the stability dimension and conditions on the SAT Mathematics subtest, $F(2, 156) = 2.98, p < .05$; the Anagram subtest, $F(2, 156) = 3.28, p < .05$; and the MVT Total Score, $F(2, 156) = 3.07, p < .05$. Comparisons indicate that subjects in the F and C conditions who attribute performance to stable factors perform better than subjects in the F condition who attribute performance to unstable factors. Figure 2 shows this relationship.

Place Figure 2 about here

There are significant interactions between attributional dimensions on the performance measures. An interaction between internality and stability approached significance on the SAT Mathematics subtest, $F(1, 156) = 3.74, p < .055$. Comparisons reveal that subjects who attribute their performance to stable internal factors score lower than those who attribute it to stable external factors. With prior SAT Mathematics score as a covariate, the stability dimension interacts significantly with the importance dimension on the SAT Mathematics subtest, $F(1, 145) = 11.49, p < .001$, and the MVT Total Score, $F(1, 145) = 3.79, p < .05$. Comparisons demonstrate that the subjects who attribute causes to important unstable factors or to unimportant stable factors perform respectively better than those who attribute causes to important stable factors or unimportant unstable factors.

Internality and importance dimensions interact significantly on the SAT Math subtest, $F(1, 156) = 10.44, p < .005$; the Number Series subtest, $F(1, 156) = 5.93, p < .05$; the Anagrams subtest, $F(1, 156) =$

4.36, $p < .05$; SAT Verbal subtest, $F(1, 156) = 4.03$, $p < .05$; and the MVT Total Score, $F(1, 156) = 8.17$, $p < .005$. Collectively these results indicate that subjects who attribute performance to important external factors or to unimportant internal factors perform respectively better than subjects who attribute performance to unimportant external factors or important internal factors.

Affect measures. The importance dimension is significant on the BDI, $F(1, 156) = 6.80$, $p < .01$; the MAACL Depression subscale, $F(1, 156) = 7.14$, $p < .01$; and on the MAACL Anxiety subscale, $F(1, 156) = 6.80$, $p < .01$. Subjects who rate performance as important are higher on depression and anxiety than subjects who rate performance as unimportant. The importance dimension interacts significantly with the globality dimensions on the MAACL Depression subscale, $F(1, 156) = 4.29$, $p < .05$. Subjects who make attributions to important specific factors exhibit significantly more depression than subjects who make attributions to important global factors. The importance and stability dimensions interact significantly on the Self-Esteem measure, $F(1, 145) = 4.44$, $p < .05$; Self-Description Inventory, $F(1, 145) = 5.56$, $p < .05$; and the BDI, $F(1, 145) = 4.27$, $p < .05$. Comparisons show that subjects who make attributions to important stable factors or unimportant unstable factors are more depressed and show lower self-esteem than subjects who make attributions to important unstable factors or unimportant stable factors.

The internality dimension interacts significantly with the stability dimension on the MAACL Anxiety subscale, $F(1, 156) = 3.99$, $p < .05$. Comparisons show that subjects who make attributions to stable internal

factors have higher anxiety than those who make attributions to either external or unstable factors.

Sex differences. Females make more attributions to global factors, $F(1, 156) = 4.47, p < .05$; and important factors, $F(1, 157) = 4.13, p < .05$ than males. Females perform significantly better than males on the Anagram subtest, $F(1, 156) = 5.43, p < .05$. On the SAT Verbal subtest, sex interacts significantly with the importance dimension, $F(1, 156) = 7.63, p < .01$. Females who make attributions to important factors performed better than males who also make attributions to important factors. Importance interacts with sex also on the MVT Total Score, $F(1, 156) = 3.96, p < .05$. Males who consider the task important score lower than all other groups.

Discussion

The study provides some support for Hypotheses 1 and 4, but leaves the other two in question. Hypothesis 1 predicts that individuals exposed to uncontrollable failure would exhibit higher anxiety and depression and lower performance than those not exposed to these conditions. Individuals exposed to uncontrollable failure have more anxiety, depression and hostility than those who experienced success or control conditions. A performance deficit does not occur independent of attribution to external and stable factors; these results will be discussed later.

Hypotheses 2 and 3 do not receive support. Abramson et al. (1978) assume that individuals who make attributions to internal factors in helpless situations will have lower self-esteem and more depression than those who make attributions to external factors. Attributions to internal factors do not differentially affect individuals' mood as a

result of uncontrollable failure or controllable success. When uncontrollable failure occurs, attributions to global factors do not lead to future helplessness in a wider range of situations than attributions to specific factors.

Hypothesis 4 predicts that attributions to stable factors in uncontrollable aversive situations would produce future helplessness deficits in similar situations. The current study indicates that individuals who make attributions for failure to stable factors have lower self-esteem than those who make attributions to unstable factors. This relationship is reversed when success (controllability) is considered. In addition, attributions to stable factors for success produce higher self-esteem than attributions to stable factors for failure.

The study provides several unanticipated results for performance measures. The stability dimension affects generalization of the performance deficit. After exposure to uncontrollable failure, individuals who make attribution to unstable factors have lower performance on similar tasks (SAT Mathematics subtest) and dissimilar tasks (Anagram subtest), than those who make attributions to stable factors.

Attributions play an important role in determining the level and type of performance and affect, independent of experimentally induced failure or success. Persons who attribute performance to stable internal factors perform worse than those who attribute performance to stable external factors. The former individuals also have higher anxiety than persons who make attributions to unstable or external factors.

The study clarifies the relationship between attributions to important factors and attributions to other factors. Higher depression

and anxiety correlates with higher ratings of importance for attributions. Subjects who attribute performance to important internal factors performed worse than those who attribute performance to unimportant internal factors; the role of importance reverses when attributions involve external factors. People who make attributions to important specific factors have more depression than those who attribute performance to important global factors. Subjects who attributed performance to important stable factors perform worse and have lower self-esteem and more depression than subjects who attributed performance to important unstable factors; these relationships reverse when attributions are made to unimportant factors.

The reformulated model provides no speculation on sex differences in attributions and performance. Females make more attributions to global and important factors. Apparently, females perform better if they consider the task important and males perform better if they consider the task unimportant.

Attributions are not as clear-cut in predicting affective and performance deficits as proposed by Abramson et al's (1978) model of learned helplessness and depression. The current study provides only partial support for their model. Uncontrollable failure has a direct effect upon affect and an interactional effect upon performance. It primarily produces its effects upon affect by increasing anxiety, hostility, and depression. Affective deficits are more enduring if attributions for uncontrollable failure are made to stable factors rather than unstable factors, especially if these factors are internal,

important, and specific. However, a further refinement of the model shows that attributions to unimportant unstable factors also are associated with affective deficits. The association of greater depression with important specific factors rather than important global factors contradicts the reformulated model.

After exposure to uncontrollable failure, attributions to unstable factors affect future performance and generalize helplessness effects across situations. Attributions to unimportant, unstable, and external factors retard performance. The roles played by these factors in retarding performance contradict those proposed in Abramson et al. (1978) model. This performance deficit may be due more to disinterestedness rather than to learned helplessness. However, the reformulated model does predict that attributions to important, stable, and internal factors retard performance.

In summary, the current study provides some support, some refinements, and some contradictions to the reformulated learned helplessness model. Attributions appear to be important in producing, extending and maintaining helplessness effects, although their exact role requires further study. Stability and internality appear to perform the major roles and their effects are modulated by their interactions with the other dimensions. Finally, depression appears to be associated most with the occurrence of uncontrollable aversive events (failure) and attributions to important, stable, internal, and specific events.

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Footnotes

Authors wish to thank Peter Nathan, Luis Nieves, Robert Woolfolk and William Miller for their helpful comments on the research design. Special gratitude to John Miller, William Johnson, and Hal Wildman for their computer and statistical assistance. This manuscript is based upon a dissertation submitted by the first author as a partial fulfillment of the Ph.D. requirements at Rutgers University. Send all requests for reprints to Dr. Esther Rothblum, Department of Psychiatry, Depression Research Unit, School of Medicine, Yale University, 904 Howard Avenue, Suite 2A, New Haven, CT 06519.

Portions of this manuscript were supported by NIMH grant MH14235.

¹These analyses can be obtained directly from the first author.

Figure Captions

Figure 1. Mean self-esteem ratings for the stability dimension with prior SAT Mathematics score as a covariate.

Figure 2. Mean scores on the MVT subtests and total score by conditions and attributions to stability.



